## **SIEMENS**

## **Data sheet**

6ES7131-6BF00-0CA0



SIMATIC ET 200SP, digital input module, DI 8x 24 V DC High Feature, input type 3 (IEC 61131), sink input, (PNP, sink input) Packing unit: 1 unit, suitable for BU type A0, color code CC01, input delay 0.05..20 ms; Channel diagnostics for: Encoder power supply short circuit, wire break, supply voltage, channel fault LED

Figure similar

General information	
Product type designation	DI 8x24 V DC HF
HW functional status	From FS07
Firmware version	
FW update possible	Yes
usable BaseUnits	BU type A0
Color code for module-specific color identification plate	CC01
Product function	
● I&M data	Yes; I&M0 to I&M3
<ul> <li>Isochronous mode</li> </ul>	Yes
Engineering with	
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V13 SP1 / -
<ul> <li>STEP 7 configurable/integrated from version</li> </ul>	V5.5 / -
<ul> <li>PCS 7 configurable/integrated from version</li> </ul>	V8.1 SP1
<ul> <li>PROFIBUS from GSD version/GSD revision</li> </ul>	One GSD file each, Revision 3 and 5 and higher
PROFINET from GSD version/GSD revision	GSDML V2.3
Operating mode	
• DI	Yes
Counter	No
<ul> <li>Oversampling</li> </ul>	No
• MSI	Yes
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Encoder supply	
Number of outputs	8
Output voltage, min.	19.2 V
Short-circuit protection	Yes
24 V encoder supply	
• 24 V	Yes
<ul> <li>Short-circuit protection</li> </ul>	Yes; per channel, electronic
<ul> <li>Output current per channel, max.</li> </ul>	700 mA
<ul> <li>Output current per module, max.</li> </ul>	700 mA
Power loss	

Power loss, typ.	1.5 W; 24 V, 8 inputs supplied via encoder supply
Address area	1.5 VV, 24 V, 6 inputs supplied via cheodel supply
Address space per module  • Inputs	1 byte; + 1 byte for QI information
Hardware configuration	Toyle, Toyle for a miorification
Automatic encoding	Yes
Mechanical coding element	Yes
Type of mechanical coding element	Type A
Submodules	Турот
Number of configurable submodules, max.	4
Selection of BaseUnit for connection variants	
1-wire connection	BU type A0
2-wire connection	BU type A0
3-wire connection	BU type A0 with AUX terminals or potential distributor module
4-wire connection	BU type A0 + Potential distributor module
Digital inputs	
Number of digital inputs	8
Digital inputs, parameterizable	Yes
Source/sink input	P-reading
Input characteristic curve in accordance with IEC 61131,	Yes
type 3	
Pulse extension	Yes; Pulse duration from 4 μs
• Length	2 s; 50 ms, 100 ms, 200 ms, 500 ms, 1 s, 2 s
Edge evaluation	Yes; rising edge, falling edge, edge change
Input voltage	
Rated value (DC)	24 V
• for signal "0"	-30 to +5 V
• for signal "1"	+11 to +30V
Input current	
• for signal "1", typ.	2.5 mA
Input delay (for rated value of input voltage)	
for standard inputs	Voc. 0.05   0.4   0.4   0.9   4.6   2.2   42.9   20 mg (in each each delay
— parameterizable	Yes; 0.05 / 0.1 / 0.4 / 0.8 / 1.6 / 3.2 / 12.8 / 20 ms (in each case + delay of 30 to 500 $\mu s,$ depending on line length)
— at "0" to "1", min.	0.05 ms
— at "0" to "1", max.	20 ms
— at "1" to "0", min.	0.05 ms
— at "1" to "0", max.	20 ms
Cable length	
• shielded, max.	1 000 m
• unshielded, max.	1 000 m 600 m
unshielded, max.  Encoder	
• unshielded, max.	
<ul> <li>unshielded, max.</li> <li>Encoder</li> <li>Connectable encoders</li> <li>2-wire sensor</li> </ul>	600 m Yes
<ul> <li>unshielded, max.</li> <li>Encoder</li> <li>Connectable encoders</li> <li>2-wire sensor</li> <li>— permissible quiescent current (2-wire sensor),</li> </ul>	600 m
unshielded, max.  Encoder  Connectable encoders  2-wire sensor  — permissible quiescent current (2-wire sensor), max.	600 m Yes
unshielded, max.  Encoder  Connectable encoders  2-wire sensor — permissible quiescent current (2-wire sensor), max.  Isochronous mode	Yes 1.5 mA
<ul> <li>unshielded, max.</li> <li>Encoder</li> <li>Connectable encoders</li> <li>2-wire sensor</li> <li>— permissible quiescent current (2-wire sensor), max.</li> <li>Isochronous mode</li> <li>Filtering and processing time (TCI), min.</li> </ul>	Yes 1.5 mA
unshielded, max.  Encoder  Connectable encoders  2-wire sensor — permissible quiescent current (2-wire sensor), max.  Isochronous mode  Filtering and processing time (TCI), min.  Bus cycle time (TDP), min.	Yes 1.5 mA  420 μs 500 μs
unshielded, max.  Encoder  Connectable encoders  2-wire sensor — permissible quiescent current (2-wire sensor), max.  Isochronous mode  Filtering and processing time (TCI), min.  Bus cycle time (TDP), min.  Jitter, max.	Yes 1.5 mA
<ul> <li>unshielded, max.</li> <li>Encoder</li> <li>Connectable encoders</li> <li>2-wire sensor         <ul> <li>permissible quiescent current (2-wire sensor), max.</li> </ul> </li> <li>Isochronous mode</li> <li>Filtering and processing time (TCI), min.</li> <li>Bus cycle time (TDP), min.</li> <li>Jitter, max.</li> <li>Interrupts/diagnostics/status information</li> </ul>	Yes 1.5 mA  420 μs 500 μs 8 μs
<ul> <li>unshielded, max.</li> <li>Encoder</li> <li>Connectable encoders</li> <li>2-wire sensor         <ul> <li>permissible quiescent current (2-wire sensor), max.</li> </ul> </li> <li>Isochronous mode         <ul> <li>Filtering and processing time (TCI), min.</li> <li>Bus cycle time (TDP), min.</li> <li>Jitter, max.</li> </ul> </li> <li>Interrupts/diagnostics/status information</li> <li>Diagnostics function</li> </ul>	Yes 1.5 mA  420 μs 500 μs
unshielded, max.  Encoder  Connectable encoders     2-wire sensor     — permissible quiescent current (2-wire sensor), max.  Isochronous mode  Filtering and processing time (TCI), min.  Bus cycle time (TDP), min.  Jitter, max.  Interrupts/diagnostics/status information  Diagnostics function  Alarms	Yes 1.5 mA  420 μs 500 μs 8 μs
<ul> <li>unshielded, max.</li> <li>Encoder</li> <li>Connectable encoders         <ul> <li>2-wire sensor</li> <li>permissible quiescent current (2-wire sensor), max.</li> </ul> </li> <li>Isochronous mode         <ul> <li>Filtering and processing time (TCI), min.</li> <li>Bus cycle time (TDP), min.</li> <li>Jitter, max.</li> </ul> </li> <li>Interrupts/diagnostics/status information</li> <li>Diagnostics function</li> <li>Alarms         <ul> <li>Diagnostic alarm</li> </ul> </li> </ul>	Yes 1.5 mA  420 µs 500 µs 8 µs  Yes  Yes; channel by channel
unshielded, max.  Encoder  Connectable encoders  2-wire sensor — permissible quiescent current (2-wire sensor), max.  Isochronous mode  Filtering and processing time (TCI), min.  Bus cycle time (TDP), min.  Jitter, max.  Interrupts/diagnostics/status information  Diagnostics function  Alarms  Diagnostic alarm Hardware interrupt	Yes 1.5 mA  420 μs 500 μs 8 μs
<ul> <li>unshielded, max.</li> <li>Encoder</li> <li>Connectable encoders</li> <li>2-wire sensor         <ul> <li>permissible quiescent current (2-wire sensor), max.</li> </ul> </li> <li>Isochronous mode</li> <li>Filtering and processing time (TCI), min.</li> <li>Bus cycle time (TDP), min.</li> <li>Jitter, max.</li> <li>Interrupts/diagnostics/status information</li> <li>Diagnostics function</li> <li>Alarms         <ul> <li>Diagnostic alarm</li> <li>Hardware interrupt</li> </ul> </li> <li>Diagnoses</li> </ul>	Yes 1.5 mA  420 μs 500 μs 8 μs  Yes  Yes; channel by channel Yes; Parameterizable, channels 0 to 7
unshielded, max.  Encoder  Connectable encoders  2-wire sensor — permissible quiescent current (2-wire sensor), max.  Isochronous mode  Filtering and processing time (TCI), min.  Bus cycle time (TDP), min.  Jitter, max.  Interrupts/diagnostics/status information  Diagnostics function  Alarms  Diagnostic alarm Hardware interrupt	Yes 1.5 mA  420 µs 500 µs 8 µs  Yes  Yes; channel by channel

<ul><li>parameterizable</li></ul>	Yes
<ul> <li>Monitoring of encoder power supply</li> </ul>	Yes; channel by channel
Wire-break	Yes; Channel by channel, optional protective circuit for preventing wire- break diagnostics in the case of simple encoder contacts: 25 kOhm to 45 kOhm
Short-circuit	Yes; channel by channel
Diagnostics indication LED	
<ul> <li>Monitoring of the supply voltage (PWR-LED)</li> </ul>	Yes; green PWR LED
<ul> <li>Channel status display</li> </ul>	Yes; green LED
<ul> <li>for channel diagnostics</li> </ul>	Yes; red LED
<ul> <li>for module diagnostics</li> </ul>	Yes; green/red DIAG LED
Potential separation	
Potential separation channels	
<ul> <li>between the channels</li> </ul>	No
<ul> <li>between the channels and backplane bus</li> </ul>	Yes
<ul> <li>between the channels and the power supply of the electronics</li> </ul>	No
Isolation	
Isolation tested with	707 V DC (type test)
Standards, approvals, certificates	
otalidards, approvais, certificates	
Suitable for safety functions	No
	No
Suitable for safety functions	No
Suitable for safety functions  Ambient conditions	No -30 °C; < 0 °C as of FS07
Suitable for safety functions  Ambient conditions  Ambient temperature during operation	
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.	-30 °C; < 0 °C as of FS07
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.  • horizontal installation, max.	-30 °C; < 0 °C as of FS07 60 °C
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.	-30 °C; < 0 °C as of FS07 60 °C -30 °C; < 0 °C as of FS07
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.	-30 °C; < 0 °C as of FS07 60 °C -30 °C; < 0 °C as of FS07
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  Altitude during operation relating to sea level	-30 °C; < 0 °C as of FS07 60 °C -30 °C; < 0 °C as of FS07 50 °C
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  Altitude during operation relating to sea level  • Installation altitude above sea level, max.	-30 °C; < 0 °C as of FS07 60 °C -30 °C; < 0 °C as of FS07 50 °C
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  Altitude during operation relating to sea level  • Installation altitude above sea level, max.  Dimensions	-30 °C; < 0 °C as of FS07 60 °C -30 °C; < 0 °C as of FS07 50 °C  5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  Altitude during operation relating to sea level  • Installation altitude above sea level, max.  Dimensions  Width	-30 °C; < 0 °C as of FS07 60 °C -30 °C; < 0 °C as of FS07 50 °C  5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Suitable for safety functions  Ambient conditions  Ambient temperature during operation  • horizontal installation, min.  • horizontal installation, max.  • vertical installation, min.  • vertical installation, max.  Altitude during operation relating to sea level  • Installation altitude above sea level, max.  Dimensions  Width  Height	-30 °C; < 0 °C as of FS07 60 °C -30 °C; < 0 °C as of FS07 50 °C  5 000 m; Restrictions for installation altitudes > 2 000 m, see manual  15 mm 73 mm

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last modified: